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VARIATIONS IN DOMINANT SPECIES OF PLANTS.—II.

By M. A. CARLETON.

At a previous meeting of the Kansas Academy of Science I presented a paper on this same subject, having reference to phanerogams only. I wish here to extend the discussion, considering at this time the group of parasitic fungi.

Of the elements of environment that tend to the modification of flowering plants, only two—heat and moisture—affect parasitic fungi to any material degree. Others do so, if at all, only indirectly, through their action upon the host plants. But there is an element more effective, probably, than any or all these in modifying the structure of parasitic plants, and that is the structure of the host plants themselves. Parasites become greatly modified often in passing from one host to another. *Puccinia graminis* becomes more narrowed, or shorter, or more rounded, according to the host on which it is found. The formation of mesospores is an excellent example of modification, and these are particularly more apt to occur on some hosts than on others. *Puccinia rubigo-vera* almost invariably produces only one-celled spores on *Hordeum pratense*. *Macrosporium*, *Helminthosporium*, *Cladosporium*, *Cercospora*, etc., have all probably varied from a common parent.